are at least partially flexible or resilient. In an example embodiment the housing parts **160** can be made of plastic, Of metal, composites or combinations thereof. In an embodiment the housing parts **160** comprise a mechanical structure allowing at least partial flexibility of the housing parts or the housing parts **160** comprise flexible or resilient material.

FIG. **2** shows a schematic view of an apparatus **100** according to an example embodiment of the invention in an open configuration. The housing parts **160** are folded fully open and the display part **110** is unbent and fully exposed. As it can be seen in FIG. **2**, the display part **110** extends over inner surfaces of both housing parts **160**.

FIG. **3***a* shows a cross-sectional side view of an apparatus **100** according to an example embodiment of the invention in an open configuration. The hinge **190** is fully folded and the spring **120** (and the display part **110** on top of the spring **120**) rests on the hinge **190**. The locking mechanism **170**, **180** locks the display assembly to an open position and stops the frame part **130** from moving too far out from the housing part **160**. In an example embodiment, the flexi **150** is attached to a PWB on the frame part **130** with an AFC bonding or connector.

FIG. **3***b* shows a cross-sectional side view of an apparatus **100** according to an example embodiment of the invention in an open configuration. The display part **110** and the spring **120** are fully open. The frame **130** doubles up as a support for the display part. The pivot **140**, **161** provides tension for the display part keeping it straight.

FIG. **4** shows a schematic view of an apparatus **100** according to an example embodiment of the invention in a half-open configuration. The display part **110** and the spring underneath are bending together as the housing parts **160** are folded from an open configuration towards a closed configuration. Energy is being loaded on the spring as it is being bent. This energy will be used to open up the apparatus when the housing parts **160** are unfolded into an open configuration in some later phase.

FIG. **5** shows a cross-sectional side view of an apparatus **100** according to an example embodiment of the invention in a half-open configuration. As the housing parts **160** are folded towards the closed configuration, a force illustrated with arrows **510**, **511** is applied to the apparatus **100** and this folding force **510**, **511** causes that the frame parts **130** are retracted inside the housing parts **160**. The pivoting connections **140**, **161** keep one end **131** of the frame parts **130** connected to the housing parts **160**, but the other end **132** of the frame parts **130** is free to move within the housing parts **160**. The arrows **520**, **521** illustrate the movement of the frame parts **130**.

In an example embodiment the frame parts **130** are retracted towards an intermediate locking position in the locking mechanism **170**, **180**. In an example embodiment, the locking mechanism **170**, **180** is such that it provides friction but does not completely prevent movement of the frame part **130**. Thereby, as the force **510**, **511** is applied the frame parts **130** are allowed to move along the locking mechanism **170**, **180**. The display part **110** is assembled on the frame part (with the spring **120** between them) and thereby also the display part **110** is retracted inside the housing part **160** into a space defined by the housing part **160**.

FIG. **6** shows a schematic view of an apparatus **100** according to an example embodiment of the invention in a half-closed configuration. The display assembly (comprising the display part **110**, the spring and the frame parts) is retracted further inside the housing parts **160** as the housing parts **160** are further folded. The arrows in FIG. **6** illustrate the movement of the display assembly.

FIG. **7** shows a cross-sectional side view of an apparatus **100** according to an example embodiment of the invention in a half-closed configuration. The frame part **130** and the display part **110** are shown half way inside the housing part **160**.

FIGS. **8***a* and **8***b* shows a schematic view of an apparatus **100** according to an example embodiment of the invention in a closed configuration. The housing parts **160** are fully folded against each other and a closed space is defined inside the housing parts.

FIG. **9** shows a cross-sectional side view of an apparatus according to an example embodiment of the invention in a closed configuration. The display part **110** and the spring **120** are fully bent and the frame **130** meets the housing **160**. In an example embodiment, the form of the inner wall of the housing part **160** and the form of the frame part **130** are configured to fit to each other so that the housing part **160** smoothly receives the frame part **130**. The space **910** formed inside the housing parts **160** is configured to accommodate the bending radius of the display part **110**.

FIG. **10** shows a cross-sectional side view of an apparatus according to an example embodiment of the invention in a closed configuration. The Figure illustrates an example apparatus wherein a display bending radius **1010** is 4.1 mm and thickness **1020** of the apparatus **100** is 14.2 mm. However this is just one example and the mechanisms disclosed herein are scalable to different device thicknesses and display bending radiuses. For comparison it is mentioned that a similar display bending radius of 4.1 mm translates into a device thickness of 20 mm in a mesh hinge concept.

FIGS. **11***a* and **11***b* show a schematic view of a locking mechanism in an apparatus **100** according to an example embodiment of the invention. In the closed configuration the housing parts **160** are locked to each other with a locking mechanism **116**, **117**. The example locking mechanism that is shown is a magnetic latch. There is a moving magnet **116** on one of the housing parts **160** and a piece of steel **117** mounted on the other housing part **160**. The housing parts **160** are released open by moving the magnet **116**.

FIG. **12** shows a schematic a block diagram of an apparatus **100** of an example embodiment. The apparatus **100** comprises a communication interface module **250**, a processor **240** coupled to the communication interface module **250**, and a memory **260** coupled to the processor **240**. The apparatus further comprises and input/output (I/O) unit **230** and the user interface (U/I) unit **110**, such as a flexible display, which are coupled to the processor **240**.

The memory **260** comprises a work memory and a non-volatile memory such as a read-only memory, flash memory, optical or magnetic memory. In the memory **260**, typically at least initially in the non-volatile memory, there is stored software **270** operable to be loaded into and executed by the processor **240**. The software **270** may comprise one or more software modules and can be in the form of a computer program product that is software stored in a memory medium. In the context of this document, a "memory medium" may be any non-transitory media or means that can contain, store, communicate, propagate or transport the instructions for use by or in connection with an instruction execution system, apparatus, or device, such as a computer.

It shall be understood that any coupling in this document refers to functional or operational coupling; there may be intervening components or circuitries in between coupled elements unless expressly otherwise described.